

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A strained silicon carbon alloy MOSFET structure, comprising:

- a substrate;
- a graded SiGe layer on the substrate;
- a relaxed buffer layer on the graded SiGe layer;
- a strained silicon carbon alloy layer on the relaxed buffer layer acting as a channel;
- a gate dielectric layer in contact with ~~on~~ the strained silicon carbon alloy layer;
- a gate electrode on the gate dielectric layer; and
- a source region and a drain region on the substrate opposite and adjacent to the gate electrode.

2. (Original) The structure of claim 1, wherein the relaxed buffer layer comprises Si-Ge-C alloy, Si, Ge or other combinations of at least two semiconductor materials.

3. (Original) The structure of claim 1, wherein the gate dielectric layer comprises HfO_2 , Si_3N_4 , Al_2O_3 , or any high dielectric constant (high k) dielectric material.

4. (Original) The structure of claim 1, wherein the MOSFET is a NMOS or PMOS.

5. (Cancelled)

6. (Currently Amended) The structure of claim 1, wherein the gate electrode is ~~comprises~~ polysilicon gate electrode ~~and poly-SiGe~~.

7. (Cancelled)

8. (Original) The structure of claim 1, wherein the substrate comprises n-type and p-type doped Ge, III-V group semiconductor, or silicon-on-insulator (SOI).

9-16. (Cancelled)